

SECTION 1

INTRODUCTION

1.1 Background

In response to growing environmental concern over leaking underground storage tanks (USTs), the U.S. Congress amended the Resource Conservation and Recovery Act (RCRA) of 1976 by enacting the Hazardous and Solid Waste Amendments of 1984 (HSWA). HSWA added Subtitle I to RCRA, mandating that the U.S. Environmental Protection Agency (EPA) develop a comprehensive regulatory program for USTs containing petroleum and hazardous substances. In response, EPA promulgated its technical rules and regulations on USTs, which became effective on December 22, 1988. The regulations are applicable to owners and operators of USTs and are codified in Title 40 of the Code of Federal Regulations (40 CFR) Part 280. The Hawaii Department of Health is the "implementing agency" for the Federal UST regulations in the State of Hawaii. The Department of Health operates its UST Program under Cooperative Agreements with EPA. The Department of Health's UST section is charged with implementing the Federal UST regulations on behalf of EPA.

The State of Hawaii has adopted its own UST statutes and regulations. Hawaii's law on USTs is set forth in Hawaii Revised Statutes Chapter 342L, entitled "Underground Storage Tanks." The specific State requirements to implement Chapter 342L are found in Hawaii Administrative Rules (HAR) Chapter 11-281, Subchapters 1 through 10. Subchapters 6, 7 and 8 provide requirements for release investigation and response, tank closure, and change-in-service. The Department of Health's UST Section is charged with implementing the State UST administrative rules. The State UST rules regarding UST closure and release response, which are the subjects of this Technical Guidance Manual (TGM), are nearly identical to and no less stringent than Federal UST requirements. As both Federal and State regulations apply to UST closure and release response, and are similar in their requirements, this TGM will focus largely on the applicable State regulations.

While this TGM is designed to inform and assist the public in compliance with the State UST regulations, a thorough and comprehensive review and understanding of the State UST regulations is required to assist in their compliance. Consequently, Section 3 (UST Closure), Section 4 (Spills and Overfills and Suspected Releases), and Section 5 (Release Response) all have the appropriate subchapters of the State UST rules included as appendix.

The UST Section is organized under the Solid and Hazardous Waste Branch of the Department of Health. An organizational chart of the UST Section (hereinafter referred to as DOH) is provided in Figure 1.1. The primary and overall goal of DOH's UST Program is to protect human health and the environment. DOH pursues and fulfills this goal by ensuring that owners and operators of USTs comply with the State UST regulations. As such, DOH's role is strictly regulatory in nature and is not to be mistaken as consultational. The activities of owners and operators of USTs and their consultants/contractors at UST facilities are overseen by DOH only to the extent necessary to discharge its regulatory role and to fulfill its goal of protecting human health and the environment.

Owners and operators of USTs that contain regulated substances (petroleum and hazardous substances) are required by the State regulations to undertake, among other things, specific actions when investigating suspected releases, when responding to and cleaning up contamination caused by releases from their USTs, and when permanently closing their USTs. A general overview of these requirements is presented in the form of a decision tree in Figure 1.2. This decision tree illustrates the step-by-step approach regarding the subject areas of release confirmation, release response, and UST closure. The decision tree basically mirrors the steps that have been set forth in the State UST regulations. A solid foundational understanding of this decision tree is key for owners and operators in order to know, and to carry out, their responsibilities and obligations under the law.

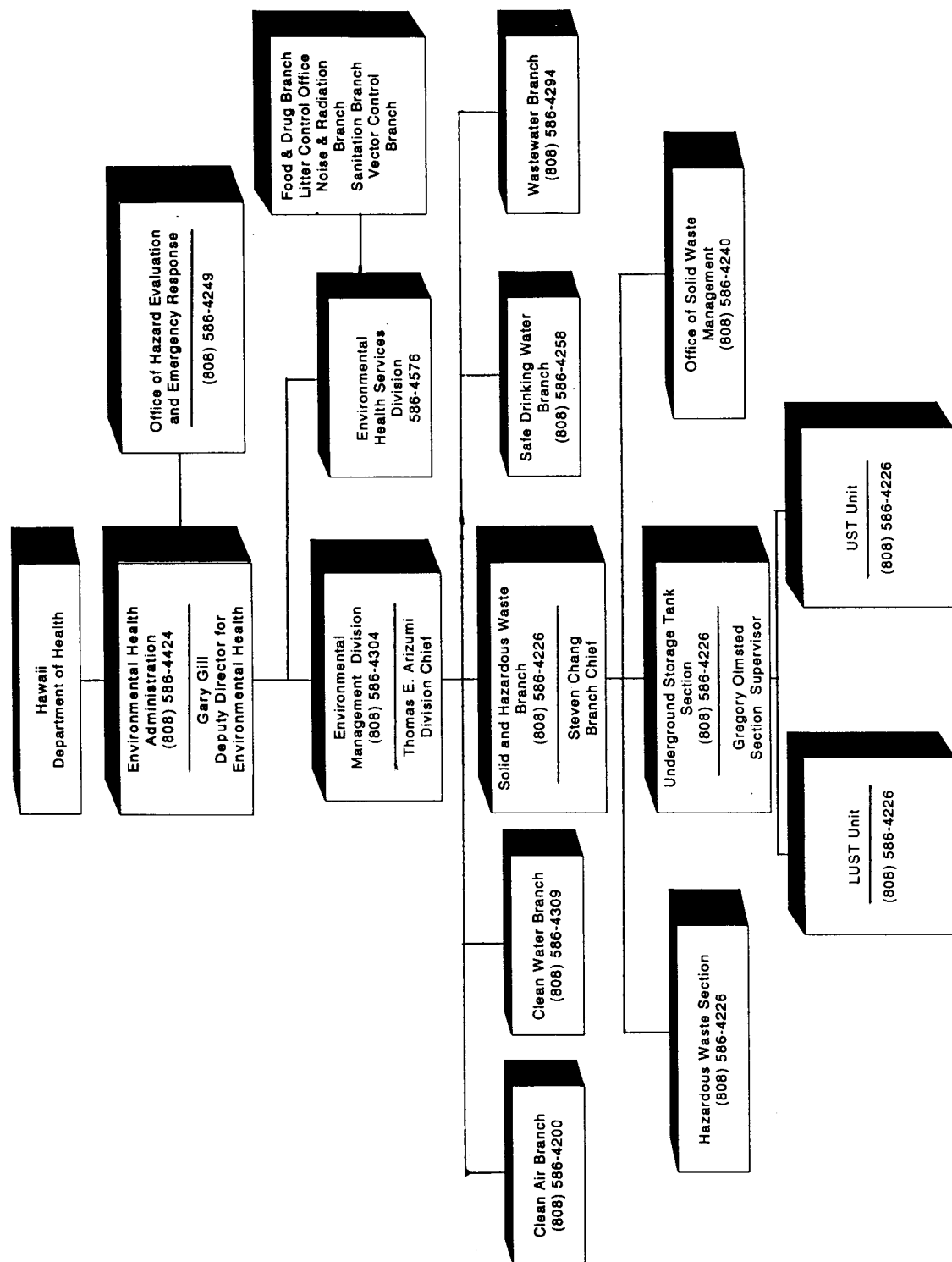


FIGURE 1.1 ORGANIZATION OF THE HAWAII DEPARTMENT OF HEALTH'S UNDERGROUND STORAGE TANK SECTION

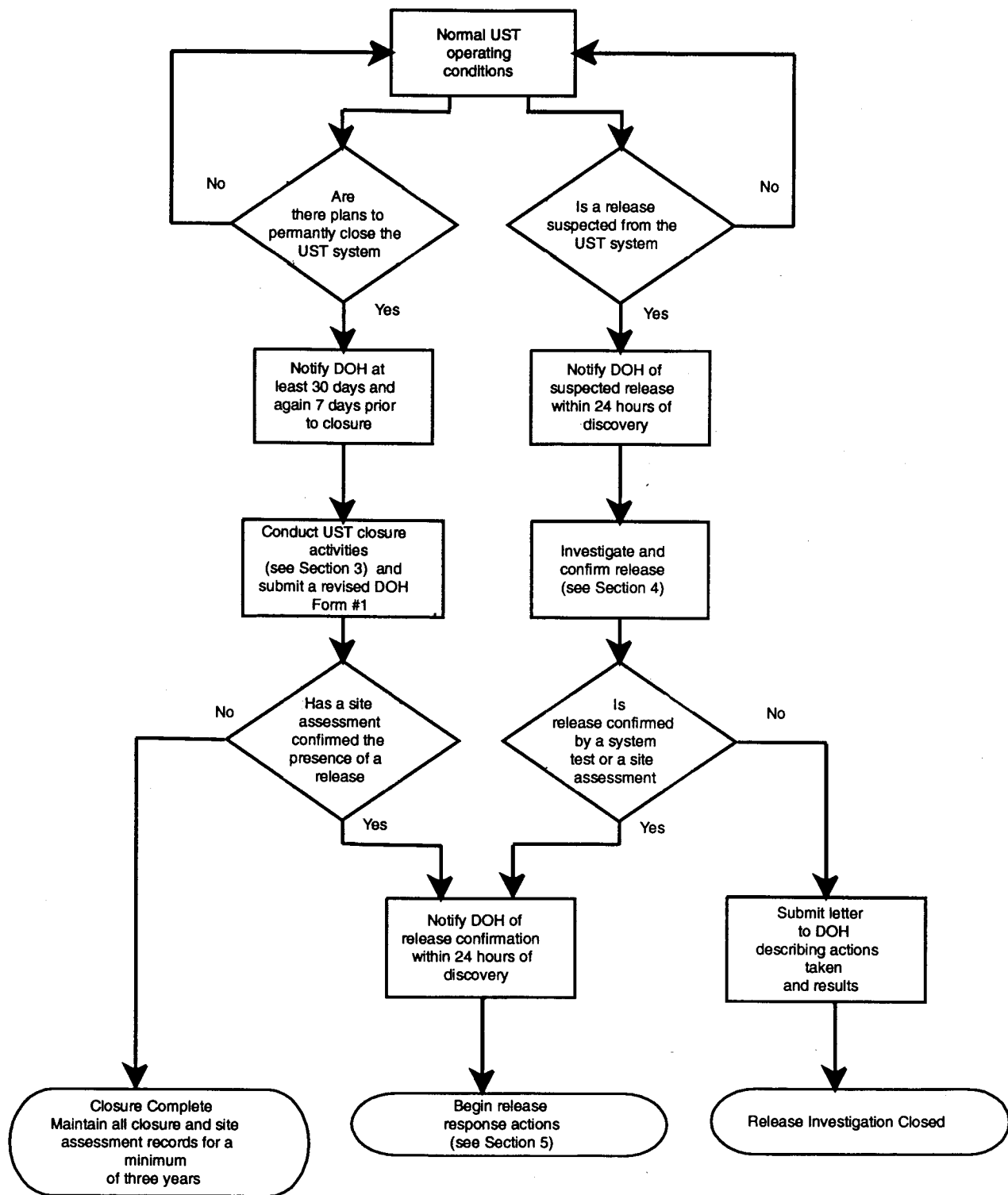


FIGURE 1.2 DECISION TREE FOR CLOSURE AND RELEASE RESPONSE

Owners and operators should be aware that certain USTs are excluded or deferred from regulation under 40 CFR Part 280 and HRS 342L (e.g., heating oil USTs, tanks less than 110 gallons, farm or residential USTs less than 1,100 gallons, etc.) and may not be subject to the guidance provided in this document. However, petroleum releases from these excluded or deferred USTs, as well as petroleum releases from non-UST sources, are subject to regulation and DOH oversight under Chapter 128D, Hawaii Environmental Response Law (HERL) and Title 11, Chapter 451, State Contingency Plan (SCP). Owners and operators responsible for petroleum releases not subject to 40 CFR Part 280 and HRS 342L should contact the Department of Health, Hazard Evaluation and Emergency Response Office for guidance on how to respond to petroleum releases regulated under Chapter 128D, and Title 11, Chapter 451.

Although the State UST regulations are intended by the State of Hawaii to be largely self-implementing by owners and operators, there is, nevertheless, the need for owners and operators to properly document and to effectively communicate their release confirmation, release response, and closure actions (i.e., through notifications, report submittals, and recordkeeping) to DOH. The complex and unpredictable nature of release response and closure activities in many cases often necessitates a multiple-phased work approach (i.e., investigative and cleanup work often must be done in several sequential phases). It is, therefore, critically important that the owner's and operator's release response and closure activities be organized and planned well in advance in order to ensure timeliness, cost-effectiveness, and compliance.

1.2 Purpose of Manual

This manual has been specifically prepared as a guidance to the State UST closure and release response requirements as implemented by DOH. DOH believes that this manual will, in effect, set the basis for good quality closure and release response work in the State of Hawaii. In addition, DOH hopes that the manual will set the stage for better all-around communication of actions and work-products among all parties. DOH

anticipates that the outcome of the effort put forth in this manual will result in more-informed environmental decision-making on the part of the owners and operators and their consultants/contractors. Finally, DOH hopes that this manual will effectively articulate and provide to its readers a better understanding of DOH's regulatory position and expectation of work performance and products.

While this manual is focused strictly on petroleum USTs regulated by HAR Chapter 11-281, with prior Hazard Evaluation and Emergency Response Office approval, it may be used as a technical reference guide by owners and operators of USTs which are excluded from the State UST regulations (e.g., heating oil USTs, and farm and residential fuel USTs). The owners and operators of excluded USTs should contact the appropriate DOH office for other requirements which may be applicable in the event of releases or waste generation (e.g., Hawaii's Environmental Response Law requirements, RCRA hazardous waste requirements, etc.). This manual is not specifically intended for use by owners and operators of USTs which contain hazardous substances. Owners and operators of hazardous substances USTs should contact the DOH UST Section for specific guidance prior to beginning any release response or closure work.

This manual provides guidance and technical assistance to owners and operators (and other responsible parties) and their consultants/contractors specifically on the issues of: (1) response to spills, overfills, and suspected releases; (2) release response to confirmed releases; and (3) permanent UST closures. This manual sets forth the specific types of actions which owners and operators must undertake, and the time frames for undertaking these specific actions. In addition, this manual is intended to help owners and operators to better plan for UST-related work and to properly document such actions in order to demonstrate compliance with the State UST regulations. In addition, this manual is also intended to educate and sensitize owners and operators to the nature and magnitude of some of the tasks necessary in order to comply with the State UST regulations.

Of particular concern to owners and operators are the requirements for cleaning up releases from their USTs. The State UST regulations establish the protection of human health and the environment as the cleanup standard for all releases. This standard is a risk-based standard, and as such, the cleanup levels can vary from site to site depending on the risk-based variables. Because DOH recognizes that establishing risk-based cleanup levels for each leaking UST site is resource-intensive, time-consuming, and overly expensive for most parties involved, DOH has established a policy on risk-based corrective action (RBCA) and decision making for use at UST sites. This policy provides for a rapid and relatively simple means of determining site-specific corrective action requirements for sites with contaminated soil and groundwater. The procedures for implementing the RBCA approach to site evaluation are given in the DOH document titled *Risk-Based Corrective Action and Decision Making At Sites With Contaminated Soil And Groundwater, Volumes I and II*, dated December 1995 and revised June 1996. Integrated with the DOH RBCA policy are the use of the comprehensive risk assessment and exposure prevention management options which are described in this document and available for use as appropriate. All of the above cleanup options are discussed in greater detail in Section 5.

Finally, this manual serves as DOH's effort to standardize reporting and recordkeeping "paper flows". Notifications, information, and reports submitted to DOH in a standardized format will facilitate DOH's review for completeness and adequacy of the work planned or performed at a UST site. In addition, standardized formats will help organize and simplify technical subject matter to a certain extent where the owner and operator may be able to at least identify and appreciate the specific actions planned or taken. DOH believes the effort put forth by owners and operators and their consultants/contractors in this regard to help streamline the "paper flow" will be in the best interest of all parties involved.

1.3 Organization of Manual

This manual is comprised of nine sections. Each section provides a discussion of the appropriate subject, and its related policies and procedures, so that owners and operators can better understand their compliance responsibilities and obligations. In addition, the discussion is intended to help owners and operators to better communicate with DOH, and particularly to better communicate their needs to their consultants/contractors. The appendices of each section consist of more specific and technically oriented materials (e.g., formats for reporting, DOH policy directive, recommended sampling procedures, etc.) which are intended to assist primarily UST consultants/contractors in carrying out their work assignments. In order to properly service their clients, those firms and individuals doing consulting and contracting work should be responsible for providing their clients with: (1) high-quality, reliable, accountable work; (2) proper documentation of the work; and (3) sound environmental decision-making and technical advice -- all in compliance with the State UST regulations foremost in mind.

Each section of this manual addresses a key element of DOH's UST Program. This first section gives some background information, and discusses the purpose of the manual and how DOH intends for the manual to be an integral part of DOH's UST Program. In addition, Section 1 details the role of DOH, the responsibilities and obligations of the owners and operators, and the contractual service responsibility of the consultant/contractor with respect to compliance with the State UST regulations. Section 2 presents the reporting, recordkeeping and permitting requirements which owners and operators must comply with when doing UST release and closure work. Section 3 presents and discusses the requirements for UST closure. The requirements for confirming suspected releases from USTs and responding to spills and overfills are found in Section 4. Section 5 discusses the response actions that must be taken for UST releases. Section 6 provides guidance on the proper management of wastes that may be generated during closure and release response activities. Section 7 discusses the general sampling and analysis requirements for UST release and closure work. A discussion on the health and safety concerns for UST work is presented in Section 8.

Finally, Section 9 provides a list of technical resources and identifies various contacts for UST-related subject areas.

1.4 Responsibilities and Obligations of UST Owners and Operators and Their Consultants/Contractors

The State UST regulations are comprehensive in scope and set forth an array of requirements for UST installation, operation, release response, closure, and financial responsibility. The State of Hawaii intends these regulations to be self-implementing by the owners and operators and therefore designed the regulations to foster voluntary compliance on the part of the owners and operators with relatively minimal regulatory oversight. Owners and operators are ultimately responsible for demonstrating compliance with the regulations by properly performing and documenting all actions taken to achieve compliance. Thus, documentation of actions becomes a key element in any compliance inspection conducted by DOH.

Most of the actions undertaken for releases and closures (HAR Chapter 11-281, Subchapters 6, 7, and 8) are complex and multidisciplinary in nature. The fate and transport of contaminants released into the subsurface environment is highly variable, depending on the nature of the contaminants, the quantity of the release, and site-specific geological, hydrogeological, and other conditions. This type information is typically not known in advance, and must therefore be obtained during the course of the release response process. Because these types of information are not readily available at the time of release confirmation, it is usually impossible to plan out all the details of a release response project in the beginning. More typically, investigative and remedial work is performed in multiple phases, with each phase of work planned based on the information obtained in the previous phase(s). Although there are some activities which the owner and operator can easily perform (such as gauging a UST and reading dispenser pump meters for the purpose of leak detection), most UST activities are technical or highly specialized, especially those relating to release response and closure. Most owners and operators will not be able to properly perform

and document these activities themselves. Examples include UST tightness testing, assessing a UST excavation for a release at closure, performing soil and ground water investigations, and cleaning up contaminated soil and ground water. Most owners and operators, particularly small businesses, will likely contract the services of an environmental consultant/contractor to assist them in complying with the State UST regulations.

Owners and operators should be aware that there are certain established practices, procedures, and protocols for conducting acceptable work relating to various technical subject areas in the environmental field. These should be adhered to as much as possible in order to facilitate DOH's understanding and ultimate acceptance of release investigative and cleanup work. Examples of these are: proper monitoring well installation and sampling, soil sampling protocol, laboratory and field quality assurance and quality control of data, data representativeness, etc.

DOH expects owners and operators and their environmental consultants/contractors to conduct environmental work in Hawaii in a manner that is consistent with acceptable science and engineering practices and that is protective of human health and the environment. In particular, consultants/contractors must be capable of performing these environmental services in a satisfactory and acceptable manner, and providing all the necessary documentation to owners and operators to demonstrate compliance with the appropriate requirements. Since the role of DOH is strictly regulatory, and since DOH does not intend to micro-manage every phase of work for every UST site cleanup or closure, consultants/contractors therefore assume a major role in the UST Program, and in the owner's and operator's effort to achieve and subsequently demonstrate compliance. Thus, the quality of service provided and the ability to properly document the work performed are key elements in demonstrating compliance.

Owners and operators and their consultants/contractors should particularly note that, on a case-by-case basis, other environmental requirements may be applicable to work

activities at their UST sites, and that these requirements also must be adequately addressed. For example, hazardous waste, solid waste, hazardous substance, air emission, effluent discharge, fire hazard, and land use issues commonly arise at leaking UST sites. Owners and operators and their consultants/contractors should contact the appropriate regulatory offices for information, regulations, and guidance in these cases.

1.5 Other Technical Resources

In conjunction with this manual, owners and operators and their consultants/contractors should obtain their own updated copy of the State UST regulations and be thoroughly familiar with the requirements specified in HAR Chapter 11-281, Subchapters 6, 7, and 8. Copies of the State UST regulations may be downloaded from the DOH Solid and Hazardous Waste Branch web site at <http://www.state.hi.us/health/eh/shwb>. In addition, Subchapters 6, 7, and 8 of the State UST rules are included as Appendices in Sections 2, 3, and 5 respectively of this TGM. The technical and multi-disciplinary nature of the State UST regulations is such that it would also be extremely beneficial, if not essential, for UST consultants/contractors to obtain and become familiar with various other technical information resources which relate to their specific areas of expertise and services offered. These information resources are numerous and a significant listing is provided in Section 9.

Owners and operators and their consultants/contractors should also note that the State of Hawaii recognizes and accepts a number of industry consensus codes and standard practices pertaining to USTs. As such, these codes and practices are specifically referenced throughout the State UST regulations as guidance to help owners and operators comply with relevant portions of the regulations. Unfortunately, not many of these are specifically related to release response activities. Nevertheless, owners and operators and consultants/contractors should take full advantage of these recommended guidance materials and obtain copies of them from industry associations, nationally recognized professional organizations, and independent testing

laboratories. See Section 9 for a list of associations, organizations, etc., where various regulations, publications, and industry consensus codes and practices can be obtained.